ZX-Appeal

vancouver sinclair users group

next meeting:

KILLARNY COMMUNITY CENTRE
6260 KILLARNY STREET
VANCOUVER

FRIDAY; 7:00PM

JUNE 12/87

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the group and ZXAppeal see the backcover.

inside

INDIANAPOLIS, INDIANA

2ND MIDWEST

TIMEX sinclair

☆ COMPUTER ☆ ☆ FEST ☆ ☆

MAY 2-3, 1987

...'Fest Report Inside
Slide Show at Meeting

THIS ISSUE......................

How can you tell summer has arrived in Vancouver? The rain is warmer! But seriously folks...this issue will be our last before the summer break. Offered within for your reading and computing pleasure are some more choice morsels from our contributors. We conclude Harvey's "Playing With" from last time. Vince L. is back again with more examples of advanced programming techniques for the 1000. Ken A. has another Kernal for us as well as a fine piece showing us how to incorporate speech into BASIC programs with the ZVoice board. Ken also has provided us with a comparison chart of the edge connectors on the ZX81, Spectrum, & the 2068 -- will be very handy. Glenn R. stands in as Humble Scribe with the meeting minutes this month as our regular Humble Scribe was off at Scribe convention, or something of the kind. Rusty T. presents further musings on his favourite type of programs...spreadsheets, with a comparison chart of the various functions each offers. NOW THIS IS IMPORTANT...we have a new contributor: Jay M. sends us his first time offering being a neat program for the 1000 which allows the imput and simultaneous translation of HEX to DEC. Very nice Jay, keep 'em coming. We round out the issue with a report on the Computer Fest and some reprints from the NETWORK. Hope everyone has a good summer and we'll be back around early August with the annual MEGA SUMMER ISSUE......................TTUL

****

BITS & PIECES....................

...as most are probably aware, the winner of the QL DRAW was Wilf R. with ticket #7. We can all expect to see some great things coming from Wilf if his triumphs such as NOVA 1000, and WRX16 Hi Res for the 1000 are any indicator.

...TS Horizon has set! The word is that Computer Trader Magazine has taken over the subcription list and will fulfill the outstanding subscription obligations of TSH. CTM is a great magazine, usually containing about 1/4 TS articles as well as a nice blend of 'other' computer articles. Good luck Chet and thanks for the support. And also thanks to Rick Duncan for producing a really nice TS oriented magazine. Too bad it became a chore but then all good parties have to end sometime.

...Tim S. is still waiting to receive and upgrade those 16K rampaks and 1000s...he's stocked up on lots of parts...so let the Editor have them for forwarding on. Remember: these upgrades are being done at COST. You can't beat the price.

...have you ever heard of a 2816 chip? Well, this is an EEPROM. With this chip and Tim. S's 64K rampak you can have 2K NVM in the 2K onboard socket WITHOUT A BATTERY. No internal wiring changes to make...just pull one out and plug the other in! Poke your MC utilities in and there they stay until you Poke something else in. Pretty Neat!

...if anyone has an extra phone line the Club now owns the Casboard BBS program. This allow the setting up of a very nice messege board on an unexpanded 2068 and allows up and down loading on a 2068 with D/Drives.

...speaking of D/Drives...WEYMIL is offering some 1/3 height Canon drives at good prices as well as now carrying the new LARKIN DD Interface and DOS cart for the 2068. It is rumoured that one Club member couldn't say NO to the very persuasive sales pitch from the man from WEYMIL and is now the proud owner of a new Disk Drive system.
****
NEW MEMBERS:

Jon Kaczor, Brooklyn, OH
John Sampson, College Point, NY

(Both new members saw copies of ZXAppeal set out at the 'Fest. John tracked down the VSUG Rep and signed up in the middle of the floor.)

KERNELS FROM KEN

The end is near! Friday, June 12 will be our final meeting before the summer holidays. Meetings will resume again on Friday, September 11.

PRODUCT PROFILE '87 is an exhibition of high tech components, test equipment, and systems. Technical seminars will also be sponsored by some of the exhibitors, and will cover semiconductors, passive components, test equipment and more.
Date: Wed. June 10 & Thurs. June 11
Place: Forum, Pacific National
Exhibition grounds
Hastings & Renfrew Streets
Time: 8AM to 6PM.

Unfortunately, there are no evening hours this year, so you must collect all your info (and free samples) between 8AM & 6PM. If you did not fill out a registration form at our last VSUG meeting, you can register at the door... just tell them you belong to the Vancouver Sinclair Users' Group. The price has been set to VSUG specifications: FREE!

Lest I forget, I would like to thank?? the members who conspired ...er... re-elected me to the executive. Its also nice to have Rusty Townsend, Glenn Read, Rois Harder and Gerd Breunung on-board as well.

It must be stated, however, that the reason VSUG continues to exist is NOT because of its elected executive! VSUG defies death by virtue of the efforts and support of numerous members and users who care enough to spend a lot of their precious time helping other VSUG members.

A special thanks to Rod Humphreys, whose dual portfolio (Treasurer & Newsletter Editor) has been served with great proficiency.

Our "Humble Scribe", Harvey Taylor, should receive a Pullitzer Prize or some such award for the literary merit with which he composes the minutes of our monthly meetings. He must, however, get rid of that mechanical watch -- it seems to run one-half hour fast. That's O.K., Harvey. Everyone knows that our meetings begin at 7PM prrrecisely!

Thanks also to Ian MacLean, who has dedicated numerous hours to the maintenance of our TS1000 library, probably one of the few in existence anywhere.

Harry Slot and Wilf Rigter have provided the technical expertise that so many of us have learned from. Harry has held Hardware Group meetings at his own home over the past year and a half -- and his wife's marital status hasn't even changed (she's still a computer widow). Wilf has shown us that the lowly TS1000 can do damn near anything a mainframe can do -- you dont really need that QL, do you Wilf?

Al Wright has hosted numerous Robotics Group meetings in his office. Rumour has it that the Income Tax inspectors are investigating his deduction of photocopy paper as an investment in "high tech robots."

If I've forgotten anyone, you probably are in the category of the numerous contributors who have either contributed their ideas or knowledge at meetings or have given them to Rod for the newsletter. With continued effort, we will all give "The Zeeper" (reported to be a good friend of John Brohman's) another difficult year of zeeping to do.

Finally, I'd like to wish everyone a good summer. If the summer weather gets too hot, or if the July monsoons keep you inside the house, be sensible... make good use of your time -- sit down and write that article that you've been meaning to write for the newsletter. Dig out some of your old programs and send us your listings. Try that interfacing project you've been wanting to try -- and write us of your experience. Write that member's profile of your computing history & interests. Happy holidays!
9999 STOP
KEN ABRAMSON

****

...meeting date!

JUNE / 87						
SUN	MON	TUE	WED	THU	FRI	SAT
*	1	2	3	4	5	6
7	8	9	10	11	**12**	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

MINUTES Fri 08 MAY 87
        by your Humble stand-in scribe.

Well for a start I should warn you that this months Minutes are not being done by the master scribe - Harvey being absent. So please ignore all typos.

Lots of goodies at this months meeting, 23 members present 1 guest speaker and the return of our long lost friend from the Amiga world in in the form of Paul Ruiterman.

Ken started his presidents report by showing us a furry musical bear - a much loved toy belonging to his daughter, he then gave us detailed descriptions of how he reversed engineered its electronics and generaly pulled the guts out of the poor thing .

Notes from Ken included a reminder that product profile is on again this year at exhibition park on June 10th-11th, and the suggestion that the users group incorporate is generaly not a good idea according to a friend of Kens who knows about such things.

Also he brought to our attention - Fame at last for our very own Wilf Rigter - with a write up in computer shopper.

Rod gave his Treas & Editors report with the good news that there is $725.00 in the credit union and for some strange reason the news letters arrived early ???.
Wilf at this point tryed to start WW III by suggesting that there was to much 2068 content in this issue.

The main section of the meeting included a thorough presentation of the CITYLINK BBS by Steve Barer our guest speaker, unfortunately an on-line demo was not possible because of a bad quality telephone line.

Other items included the kind donation to the library by Rusty Townsend of books and magazines.

Wilf and the Hardware group is to hold a workshop for a build it your-self 32K non volatile memory expansion for the ZX81/TS100 and 2068, Wilf demonstrated some of the versatile uses of this unit at the meeting.

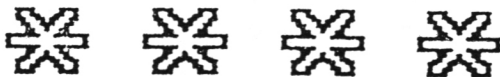Harry Slot showed his design for the beeper/relay diagnosic aid board for the ZX81/TS100.

Finally the long awaited QL draw was carred out with the prize going to wilf Rigter - will the long stream of Rigter TS1000 innovations now dry up ? -we can only wait and see.

    until Harvey returns - Glenn Read.

Rod will be giving us a slide show on all the attractions at the Mid-west Timex Sinclair computer fest' that he attended at next months meeting.
Rod concluded with a request for more material for the newsletter so get writing everyone.

The 2nd Midwest Timex Sinclair
Computerfest.........A Report

Bleary eyed, I took the 6:40am
flight to Seattle. A 3 hour wait. On
to Chicago and another 1 1/2 hour
wait. Sixteenth in line to take-off
and finally on again to
Indianapolis, arriving at 7:00pm
instead of 6:00. The hotel bus took
me to the Holiday Inn just in time
to check-in, shave, shower, change
and make it in time for the gala TS
Social and Banquet. Everyone was
there: I sat next to Carol and
George Whitham of A+ Computer
Response, Gary Lessenberry of the
Chicago Area TS Group, and Pete
Fischer, of Tempe, Arizona,
co-author of The Guide To TS
Telecommunications, the leading
authority on the subject. Frank
Davis, the Fest producer, and Paul
Holmgren, the Chairman, each gave a
short address to the overflow crowd
of 100+. Everyone stood and
introduced themselves - this was
really neat as I was able to put
faces to so many names I was
familiar with. Then down to
business...dinner.

The next morning I was up bright and
early so as to be ready at 9:00am
for the doors to open -- didn't want
to miss out on those 'Fest
specials'. Two large rooms, each
about 5 times the size of our club
room, were occupied by the dealer
and User Group tables. Two smaller
seminar rooms, each seating about
30, were the venue for an excellent
set of lectures and seminars on
topics ranging from "Desktop
Publishing" by Mark Fendrick,
"Hardware Interfacing" by Tom Bent,
"The QL Computer and Superior
Sinclair Technology" by Frank Toemay
of Quantum Computing. A fifth room
was set aside for a flea market -
the site of some incredible
bargains. The two main rooms were
jammed each day and the five
seminars I went to were very well
attended. I'm not sure of 'Fest

attendance figures but I heard the
number 1100 mentioned as the number
of attendees on Saturday. Door
prizes were given away twice every
hour - and I won!! -- a gift
certificate good for my choice of
any piece of software sold by RMG
Enterprises. I chose "Music Maker"
for the 2068. I also had the
welcome opportunity to meet a couple
of long - distance VSUG members.
Kenton Garrett, of Lansing, Kansas,
and I had a very pleasant lunch
together on Saturday, and Ken Duda,
of Northlake, Illinois, introduced
himself to me on the floor. The
'Fest specials were super. A+
Computer had the QL down to $99US
-with software. I'm sure some of
their dealers were not too pleased
but the buyers were - very! All were
gone by the end. Zebra had six
tables and was swamped almost
continually due to their 'Fest
specials - I picked up a Graphics
Tablet AND two pieces of
accompanying software for $49.00US.
Memopaks for the 1000 were down to
$10.00US. I'm not going to tell you
how much I spent except to say that
I was seriously worried whether it
would all fit into my bag. What I
told ye loyal snivel serpent at the
airport is another thing I won't go
into right now. Sunday morning
about thirty chaps representing many
User Groups had breakfast together.
I again sat with Gary and Pete who
were obviously great pals. Gary, a
bristle-headed lifer in the Marine
Corps and Pete, an 80's version of
what we used to call a 'hippie' -
sorry Pete but I'm sure you'll agree
with me when I say you're not
exactly 'mainstream'. These two
chaps served very well as an example
of how our computers can help bridge
many gaps and bring people together
that wouldn't normally.

Then all too soon it was over. The
dealers had packed and gone, the
janitor was folding the tables and
I'm left with memories of two of the
best days of my life. How was
Indianapolis? I don't know, never
saw it.

CD-ROM

You will hear a lot more about CD_ROM in the next year or two. If you have not yet had an opportunity to see the Grolier Encyclopedia demonstration, do so. The ability to search a 50 megabyte database in seconds will irretrievably change the way we conceive of knowledge.

There are at least two different levels of encoding used in CD-ROM. The problem is that the error rate is fairly high in the optical drives, so layers of error correction are used. In these schemes a lot of redundant information is added on to make sure that the bit you do get is correct. The first layer is called Cross Interleaved Reed-Solomon Code [CIRC]. The second layer is usually called "the layered ECC" [Error Correction Code]. There is the option of yet another user defined layer on top of this.

You will notice in the table below that the data transfer rate for CD-ROM is not all that high – a Winchester can be almost 4 times faster, but the amount of data is phenomenally large. This points to a fundamental problem. The need for good software, good file handling methods, efficient indexing to be able to access the desired information in short order. There is no standard file structure, as of yet, if there ever will be. This means that an optical system designed for say the IBM-PC will not be easily used by any other computer, although it might be straightforwardly interfaced.

MASS STORAGE FACTORS TABLE

Size	RPM	TPI	Encoding	Transfer Rate	I/F	Total Bytes
8" Floppy	360	48	FM	500K/s	Standard	1.6M
5.25"	300	48	FM	250K/s	Standard	360K
5.25"	300	96	MFM	250K/s	Standard	720K
5.25"	300	96	MFM	?	Standard	1.2M
3.5"	300	135	MFM	250K/s	Standard	800K
Hard Disk	3600	?	Various	5M/s	Several	5 M –800M
Bubble Memory	N/A	N/A	N/A	50K/s	No Standard	128K-512K
CD-ROM	1122	14,500	See Below	1.3M/s	No Standard	500M-2G

Aphorisms for the wise & innocent:

"Abandon data all ye who enter here."
                    [Seen on a Disk Drive]

"Blessed are the skeptical, for they have made backups."
                    [Glommed from an ad]

Sometimes you may wonder whether hardware designed for one computer is at least physically compatible with one of the other two Z80 Sinclair computers. If the active pins used (top and bottom) are the same for both computers, then there is a good chance that the hardware might be made to work on both computers.

	TOP				BOTTOM		
ZX81	SPECTRUM	TS2068	PIN	TS2068	SPECTRUM	ZX81
		GND	1	GND		
	A15	EAR	2	SPKR/TAPE	A14	
	A13	A7RQ	3	+15V	A12	
D7	D7	D7	4	+5V	+5V	+5V
RAMCS	NC	DZIN	5	NC	+9V	+9V
SLOT	SLOT	SLOT	6	SLOT	SLOT	SLOT
D0	D0	D0	7	GND	GND	GND
D1	D1	D1	8	GND	GND	GND
D2	D2	D2	9	CLOCK	CLOCK	CLOCK
D6	D6	D6	10	A0	A0	A0
D5	D5	D5	11	A1	A1	A1
D3	D3	D3	12	A2	A2	A2
D4	D4	D4	13	A3	A3	A3
INT	INT	INT	14	A15	IORQGE	A15
NMI	NMI	NMI	15	A14	GND	A14
HALT	HALT	HALT	16	A13	VIDEO	A13
MREQ	MREQ	MREQ	17	A12	Y	A12
IORQ	IORQ	IORQ	18	A11	V	A11
RD	RD	RD	19	A10	U	A10
WR	WR	WR	20	A9	BUSRQ	A9
BUSAK	-5V	BUSAK	21	A8	RESET	A8
WAIT	WAIT	WAIT	22	A7	A7	A7
BUSRQ	+12V	BUSRQ	23	A6	A6	A6
RESET	-12V	RESET	24	A5	A5	A5
M1	M1	M1	25	A4	A4	A4
RFSH	RFSH	RFSH	26	NC	ROMCS	ROMCS
	A8	EXROM	27	RED	BUSAK	
	A10	ROSCS	28	GRN	A9	
	NC	BNKEN	29	BLU	A11	
		IOA5	30	BUSISO		
		SOUND	31	VIDEO		
		GND	32	GND		

7

SIMPLE ZVOICE SPEECH FOR BASIC PROGRAMS

By Ken Abramson

Now that you have your ZVOICE board up & running, how can you learn to use it with a minimum of difficulty? The scheme presented here should give you reasonable results with very little effort. The quality of speech, however, will not be quite as good as the quality from Wilf Rigter's machine code routines, but should be quite acceptable for your first attempts. The speech will be a little slower, but the programming will be easier, -- mostly BASIC. Follow the simple steps below, and you will easily be able to add speech to any BASIC program.

```
1 REM YYPEEK #TAN
     (TYPE IN EXACTLY AS SHOWN
     USING SINGLE KEY COMMANDS
     FOR PEEK AND TAN)

2 REM TS1000 "ZVOICE" SPEECH
     ROUTINE FOR BASIC PROGRAMS
     BY KEN ABRAMSON

5 GOTO 61
10 FOR I=1 TO 1000
20 LET O=VAL O$(2*I-1 TO 2*I)
30 POKE 16515,O
40 RAND USR 16514
50 IF O=0 THEN RETURN
60 NEXT I

1000 PRINT "GOOD WORK"
1010 LET O$="3430330446524200"
1020 GOSUB 10
1030 PRINT "TIMEX"
1040 LET O$="13061607425500"
1050 GOSUB 10
1060 PRINT "COMPUTER"
1070 LET O$="4215160925311352520
0"
1080 GOSUB 10
1090 PRINT "HELLO"
2000 LET O$="2707455300"
2010 GOSUB 10
2020 PRINT "NURSERY RHYME"
2030 LET O$="1346194442620413461
944426204451213620455135951040442
732040604461511335204482313042253
104595100"
2040 GOSUB 10
2050 LET O$="462613550423620440 5
3425500"
2060 GOSUB 10
```

1. The main subroutine is given in lines 1 to 60. Take note of the three variables used: I, O, & O$. These variables should not appear anywhere else in the main BASIC program.

2. Load the BASIC program to which you want to add speech. Look through the program and examine the variables that are used. If any are the same as I, O, and O$, you must change these variables IN THE SPEECH ROUTINE PROGRAM SHOWN ABOVE.

3. Type the speech subroutine (lines 1 to 60) into your larger BASIC program, as close to the beginning of the program as possible. You might have to use different line numbers, but line 1 in the TS1000 version must remain the first line of the program.

4. Use the allophone chart below in order to compose your speech string, O$ (see example speech strings shown in the above program, lines 1000 to 2060). Insert this speech string and your GOSUB 10 statement into the place in your BASIC program where you want the computer to speak. Note that you must terminate each speech string with 00 in order to silence the ZVOICE board. Also note that all allophone numbers should be entered as double digits in the string; e.g.: use 05, NOT 5. Use 04 as the silent space between words in a sentence. You can use three 04's in a row to give the silent period between sentences.

Example speech strings are shown in lines 1000 to 2060 under the main speech subroutine (lines 1 to 60). You can try these out by inserting a few into your BASIC program or just by running the whole speech routine program (lines 1 to 2060) by itself.

If you wish to delve more deeply into SP0256 speech synthesis, check your newsletters over the past year for routines by myself or Wilf Rigter. There are also phonetic text to speech editor programs called PHONETIC ZSPEAK available for the TS1000 and the TS2068 in our software library.

```
1 REM TS2068 "ZVOICE" SPEECH
     ROUTINE FOR BASIC PROGRAMS
     BY KEN ABRAMSON

5 GOTO 61
10 FOR I=1 TO 1000
20 LET O=VAL O$(2*I-1 TO 2*I)
30 OUT 23,O
40 IF O=0 THEN RETURN
50 PAUSE 9
60 NEXT I
```

SIMPLIFIED ALLOPHONE TABLE

VOWELS SOUND	ALLOPH.	CONSONANTS SOUND	ALLOPH.
HAT	26	BUG	63
LATE	20	COOK	42
FUR	47	MUCH	50
FAR	59	MUD	33
USEFUL	24	FELL	40
MET	07	GET	34
KEEP	19	HELP	27
HEAR	60	JAM	10
HER	52	COOK	42
LUKE	06	LET	45
HIT	12	MUD	16
CODE	53	RAN	11
GOT	23	SANG	44
BOOK	30	POP	09
MOON	31	QUIT	4146
MORE	58	REST	51
HOT	32	YES	55
BOY	05	CASH	37
BUG	15	CAT	13
YOU	25	THIS	18
PAUSE	04	THINK	29
		MOVE	35
		WEST	46
		WHAT	48
		NEXT	4155
		YOU	25
		MAZE	43
		AZURE	38

```
1 REM TS2068 "ZVOICE" SPEECH
        ROUTINE FOR BASIC PROGR
AMS       by KEN ABRAMSON
 5 GO TO 61
10 FOR I=1 TO 1000
20 LET O=VAL O$(2*I-1 TO 2*I)
30 OUT 23,O
40 IF O=0 THEN RETURN
50 PAUSE 9
60 NEXT I
1000 PRINT "GOOD WORK"
1010 LET O$="3438033446524200"
1020 GO SUB 10
1030 PRINT "TIMEX"
1040 LET O$="13061627425500"
1050 GO SUB 10
1060 PRINT "COMPUTER"
1070 LET O$="421516292531135252 0"
1080 GO SUB 10
1090 PRINT "HELLO"
2000 LET O$="2707455300"
2010 GO SUB 10
2020 PRINT "NURSERY RHYME"
2030 LET O$="13461944426204134 61944426204451212362455135951040 42732846064461511335284462313042 53184595100"
2040 GO SUB 10
2050 LET O$="462613558423620444 0534255500"
2060 GO SUB 10
```

```
************************************
```

Semi-Multiple Statements
by V. Lee

Most computer basic including the 2068 support multiple statements. That is more than one command can be joined together to share the same statement number.

The ZX81 does not support this feature but with careful planning a simple version of a multiple statement can be created by using logical expressions. For example:

```
96 IF I$="E" THEN GOTO 200
97 IF I$="S" THEN GOTO 60
98 IF I$="Q" THEN GOTO 500
99 REM
```

ALL THREE LINES CAN BE REPLACED WITH LINE 120 BELOW. THE FIRST SET OF PARENTHESES CONTAINS THE BASE NUMBER 110. IT IS ADDED TO OR SUBTRACTED FROM THE OTHER NUMBERS IN THE PARENTHESES, DEPENDING ON THE INPUT. THE REASON FOR THE BASE NUMBER IS IF AN INVALID INPUT IS GIVEN, LINE 120 WILL STILL GOTO LINE 110.

```
 10 GOTO 100
 60 PRINT "■■"
 70 GOTO 110
100 PRINT "E:  GOTO 200",,"S:
GOTO 60",,"Q:  GOTO 500"
110 INPUT I$
120 GOTO (110)+(90 AND I$="E")-
(50 AND I$="S")+(390 AND I$="Q")
200 PRINT "■■■"
210 GOTO 110
500 PRINT "■■■"
510 GOTO 110
520 REM
```

UNLIKE USING INKEY$, THERE IS NO BREAK COMMAND FOR INPUT, MAKING INPUT A BETTER CHOICE FOR MENU DRIVEN PROGRAMS.

```
1 REM
            THIS PROGRAM DRAWS
```
THE BORDERS FOR A GRAPH. IN BOTH LINE 20 AND LINE 30, A CHOICE IS MADE REGUARDING WHICH CHARACTER TO PRINT. THE EQUATION IS SET UP SO THAT WHAT IS TRUE WILL BE PRINTED AND WHAT IS FALSE WILL BE IGNORED.

```
10 FOR C=0 TO 20
20 PRINT AT C,5;("+" AND C/5=I
NT (C/5))+(":" AND C/5<>INT (C/5
))
30 PRINT AT 20,C+5;("+" AND C/
5=INT (C/5))+("-")
40 NEXT C
50 REM
```

```
            LINE 20 DRAWS THE
VERTICAL AXIS AND LINE 30 DRAWS
THE HORIZONTAL AXIS.
```

```
1 REM
            WE SAVED THE BEST FOR
```
LAST. THIS IS AN ACTUAL GRAPHICS GAME USING LOGICAL EXPRESSIONS. INSTEAD OF USING THE CONTENTS OF THE PARENTHESES, THE EXPRESSIONS THEMSELVES CAN BE EVALUATED WITH TRUE EQUALED TO ONE AND FALSE EQUALED TO ZERO. THESE VALUES CAN THEN BE TREATED AS NUMBERS AS SHOWN BELOW IN LINES 130 AND 140.

```
 10 SLOW
 20 LET S=0
 30 LET C=S
 40 LET H=14
 50 LET M=H
 60 DIM B$(32)
 70 POKE 16418,0
 80 CLS
 90 PRINT AT 20,0;"■■■■■■■■
■■■■■■<1";TAB 11;"
IN-THE-HOLE";TAB 30;"0>",,"HIT:
";S;TAB 22;"MISS: ";C
100 LET Y=INT (RND*32)
110 FOR X=0 TO 19
120 IF H=M THEN LET M=INT (RND*
28)
130 LET H=H+(M>H)-(M<H)
140 LET Y=Y+(INKEY$="0" AND Y<3
1)-(INKEY$="1" AND Y>0)
150 PRINT AT 20,H;"■■■■■";AT X,
Y;"0"
160 NEXT X
170 IF Y>H AND Y<H+4 THEN GOTO
200
180 LET C=C+1
190 GOTO 210
200 LET S=S+1
210 FOR X=0 TO 19
220 PRINT AT X,0;B$
230 NEXT X
240 GOTO 90
250 REM
```

```
            PRESSING "1" WILL MOVE
THE FALLING BALL TO THE LEFT
AND PRESSING "0" WILL MOVE IT TO
THE RIGHT.
```

9

SPREAD SHEETS and THEIR DIFFERENCES.

By Rusty Townsend

Spread sheets fall into two broad categories that I will call "TITLED" and "OPEN". After that, the "OPEN" ones have two classes- the first is the original plain "OPEN", and the variation I will call "FIXABLE TITLE".

The most significant difference between these three types is the treatment of the title area for the columns and rows with reference to the grid of the spread sheet, and whether or not the titles remain visible and/or scroll with the grid as it is scrolled.

Following is a description of each type and some named examples of each.

"TITLED" Spread Sheets.

These generally have the top two cells of each column and the first cell of each row reserved for alpha-numeric titles outside the grid of the spread sheet.

Their main advantage is that the titles scroll with the spread sheet as necessary so that the relevant titles are always visible.

However, since these generally have the cell width fixed at seven characters, the titles must be short and cannot be very descriptive.

With the title area outside the grid, the grid may not accept text, and may only accept data in the form of numbers and formulae in the form of numbers and cell references with mathematical operators. When setting up a standard template, this may prevent you from inserting a question mark in each cell that requires the entry of numeric data when working with that spread sheet template, although you can always insert a zero, which is what you must do with VU-CALC or the program will crash when you insert a formula and it attempts to calculate an empty cell.

MEMOCALC for the TS1000 (with a 16K or larger rampak), and OMNICALC for the TS2068 (in the SPECTRUM mode) are typical of this type.

"OPEN" Spread Sheets.

As the title implies, these have an open grid with each cell able to accept text, numbers or a formula. They may or may not have variable cell widths.

There is no limit to the number of cells you can use to title a column, and without variable cell width there is generally provision for row titles to extend into a second or third cell on that row.

However, with this type the titles quickly disappear from view as you scroll the spread sheet, so you must have a hard copy of your titles for reference to know the relevance of the cursor location.

VU-CALC for the TS1000 (with a 16K rampak), and VU-CALC for the TS2068 are typical of this type.

"FIXABLE TITLE" Spread Sheets.

These are similar to the "OPEN" type except that they have a special function that allows you "lock in" the cell(s) used for column and row titles. After that, the titled area scrolls as necessary with the spread sheet to keep the relevant titles visible (like a "TITLED" spread sheet), while the rest of the grid continues to function like an "OPEN" one.

Unfortunately, I do not know of any spread sheet for the TS1000 or the TS2068 that has this function. If any reader is aware of such a spread sheet, I would certainly appreciate hearing about it.

In future articles I will continue with some more direct comparisions between the spread sheets that are available for the TS1000 and for the TS2068.

As time allows and ye EDITOR permits space in future newsletters, I will continue with my comments on the features listed in the above summary.

Rusty Townsend.

SPREAD SHEET SUMMARY	VU-CALC	OMNICALC 2	SCREEN-CALC 2.0
Type	OPEN	TITLED	OPEN
Number of columns	50 (1 to 50)	99 (1 to 99)	100 (0 to 99)
Number of rows	50 (A to AX)	250 (a to ip)	100 (1 to 100)
Visible columns	4	3 + titles	3
Visible rows	18	15 + titles	6
Cell width	7	7	8
Cell height	1 row	1 row	2 rows upper: text lower: numbers
Left justify	yes	text only	yes
Right justify	yes	numbers only	no
Template shape	fixed	adjustable	adjustable
Template columns	50	3 to 99	10 to 100
Template rows	50	15 to 250	10 to 100
Template cells	2500	4,000 maximum	1,008 maximum
Simple operators (note 1)	yes	yes	yes
Higher operators (note 2)	no	yes	yes
Integer format	yes	yes	no
Two-decimal format	yes	yes	no
Floating decimal format	yes	no	yes
Sum by range	yes	no	no
Total/sub-total function	no	yes	yes
Calculate by rows	yes	yes	yes
Calculate by columns	no (note 3)	yes	yes
Save template & data	yes	yes	yes
save data only	no	yes	yes
Month function	no	yes	no
TS2068 compatible	yes	no	yes
Spectrum compatible	yes	yes	no
OS-64 compatible	no (note 4)	no	no (note 4)
TS2040 printer			
- screen only	yes	on command	yes
- further rows	no	yes	no
"Wide" printers	no	yes	screen only
Loading time	1.5 minutes	1 minute	1 minute

NOTES.
1. Add, subtract, multiply, divide.
2. Powers, roots, trig functions, possibly others.
3. Can be "forced" by recalculating the grid once for each column in the used portion of the grid.
4. Error message displayed on the screen when LOADing fails suggests that a relocation of RAMTOP might allow the OS-64 to function and give a 64 character screen. Has anybody out there got a solution for this?

11

HEX TO DEC CONVERTER

... by Jay Mundy

Ever run across a great looking program in a magazine only to find that the listing is given in HEX?

The following program solves this problem by converting the HEX values to DECIMAL values and POKEing them into memory beginning at the address assigned in line 70.

ENTER "Q" to end the program.

```
   5 REM HEX TO DEC CONVERTER
         BY JAY MUNDY
  10 LET A=10
  20 LET B=11
  30 LET C=12
  40 LET D=13
  50 LET E=14
  60 LET F=15
  70 LET Z=50000
 100 PRINT "ADDRESS"; TAB 15;
     "HEX"; TAB 25;"DEC"
 110 INPUT "ENTER HEX VALUE ";
     A$
 120 IF A$="Q" THEN STOP
 130 IF LEN A$=1 THEN LET A$=
     "0"+A$
 140 LET S= VAL A$(1)
 150 FOR X=1 TO  LEN A$-1
 160 LET S=S*16+ VAL A$(X+1)
 170 NEXT X
 180 PRINT Z; TAB 15;A$; TAB
     25;S
 190 POKE Z,S
 200 LET Z=Z+1
 210 GO TO 110
```

If you only want to display the values and/or wish to convert values greater than 255, the following changes should be made:

    Delete lines 70, 190, 200

    100 PRINT "HEX","DEC"
    180 PRINT A$,S

****

CIRCULATION OF MAGAZINES AND BOOKS.

From your Vice-Pres.

I brought 20-odd magazines and a dozen books that were superfluous to my needs to our May meeting.

After announcing that they were a donation to our club library and that they were available to all on a first come-first serve basis, I was amazed at just how quickly the pile disappeared before my eyes.

I'm sure there are others with books and magazines that are no longer needed and are just taking up shelf space, and I'm just as sure there are others who would like to read them.

So, how about going through your shelves this summer and decide which books and magazines you can part with, and then bring them to one of our club meetings this fall.

They'll all become part of our club library, and if they're not all borrowed by the end of the meeting, then I or some other volunteer will cart the remainder home and bring them back to the next meeting.

Borrowers will be expected to return them one month later INTACT so the next borrower can have the benefit of reading the same stuff you did.

I don't expect we'll keep any records of who borrowed what. Possibly at some later date we may attempt to list what we have got, so after you've read Part 1 of something, we may be able to help you find Part 2.

FOR SIR CLIVE, THERE'S ALWAYS A TOMORROW

LONDON

They can stop writing those obituaries bemoaning the end of an era in the British computer business. Sir Clive Sinclair is still around, as feisty as ever.

When the iconoclastic entrepreneur sold his ailing computer business to rival Amstrad Consumer Electronics plc to concentrate on new markets and challenges [*Electronics,* April 14, 1986, p. 64], it appeared that he might just fade away. But Uncle Clive, as he is affectionately known in the industry, is not the fadeaway type. He has bounced back with a new company called Cambridge Computer Ltd., a $300 laptop computer, and plans for a wafer-scale-integration-based version—as well as a new type of telephone system.

To understand why Sinclair made the Amstrad deal, it is necessary to know that he is a man who lives for the future. "I sold the old computer range and the use of my name on computers because we were short of cash," he says. "It was a long-term outlook. The important parts of our business were wafer-scale and other computers. We are not aiming at the home market. We are aiming at the serious user. The new computer is cheap because we don't want to give people an excuse not to buy it."

It is perhaps not the new Z88 but the one after that that looks most exciting. Sinclair says that the research into wafer-scale integration has as its goal a small computer. He expects the first wafer-scale products to materialize early next year and the computer to be out by year's end.

Next year will also be exciting for Sinclair, because that is when he intends to take on the cellular telephone market with a portable phone featuring a radio link to any of three other phones: the telephone at home, the telephone at work, and the cellular telephone in the car. The phone will automatically select which is the nearest and cheapest of the three and make the call on that.

All this suggests that if the industry was surprised by his quick return, it shouldn't have been. Sinclair's history has been full of such ups and downs since 1962, when he formed Sinclair Radionics to make and sell radio and amplifier kits. The kits were inexpensive and were sold by mail order—two features that have marked every Sinclair product since, except for his electric tricycle, which was too big to mail.

MOVING ON. Sinclair's first move forced the prices of hi-fi systems down to a level that people could afford. In 1972, he started making pocket calculators, using the profits from the successful hi-fi business. They were also low-cost, they sold like hotcakes, and they forced the market price of calculators down. Then the Japanese flooded the market with even cheaper calculators that were far more reliable than the Sinclair models. Sinclair tried to balance his losses with a new idea—one of the first digital watches. It was a great idea with a large market. But reliability problems caused the company heavy losses in 1976.

During that year the British government poured close to $4 million into the business. And despite another innovative product—a pocket TV with a 2-in. screen—the company suffered heavier losses. By 1979, the company looked dead, and Sir Clive was out.

In 1980 he bounced back with a new company, Sinclair Research, and the ZX80 home computer. The success of that and later computers in the range earned him knighthood in 1983. But by 1985 the home computer market was disappearing. His QL computer was a flop. And his latest quirk, the electric tricycle, was a nonstarter.

But, he adds, "the computers are my principal interest." Although the deal with Amstrad specifies that the machines will not bear the Sinclair name, Sir Clive is not worried: "It doesn't matter; everybody knows where the computers come from."

—*Steve Rogerson*

SINCLAIR: "I sold the old computer line because we were short of cash."

BUZZ WORDS...we all use them but do we really know what they mean? Would we like to learn some more... all the better to baffle and piss-off our noncomputerese friends and relations. Over the coming issues of ZXAppeal', we'll print successive portions of the BUZZWORD DICTIONARY so all might broaden themselves.

ABBREVIATED ADDRESSING: A modification of the Direct Address mode which uses only part of the full address and provides a faster means of processing data because of the shortened code.

ACCUMULATOR: One or more registers associated with the ALU which temporarily store sums and other arithmetical and logical results of the ALU.

ACIA (Asynchrous Communications Interface Adapter): A Motorola device which interfaces the microprocessor's bus-organized system with incoming serial synchronous communication information. The parallel data of the multi-bus system is serially transmitted by the asynchronous data terminal. The ACIA interfaces directly with low-speed Modems to enable microprocessor communication over telephone lines.

ADAPTER: A device used to effect operative capability between different parts of one or more systems or subsystems.

ADDRESS: An address is a coded instruction designating the location of data or program segments in storage. The address may refer to storage in registers or memories or both. The address code itself may be stored so that a location may contain the address of data rather than the data itself. This form of addressing is common in microprocessors. Addressing modes vary considerably because of efforts to reduce program execution time.

ALGORITHM: Any mechanical computational procedure. As applied to microprocessors, the meaning can be narrowed down to: "A set of rules for getting a specific output from a specific input."

ALU (Arithmetic and Logic Unit): The ALU is one of the three essential components of a microprocessor . . . the other two being the registers and the control block. The ALU performs various forms of addition and subtraction; the logic mode performs such logic operations as ANDing the contents of two registers, or masking the contents of a register.

ARCHITECTURE: Any design or orderly arrangement perceived by man: the architecture of the microprocessor. Since the extant microprocessors vary considerably in design, their architecture has become a bone of contention among specialists.

ASCII: ASCII* is a standardized 7-bit binary code of which various combinations of 1's and 0's correspond to 128 different keyboard characters and control symbols. Most microcomputers are able to communicate to terminals by reading and writing ASCII symbols via this 7-bit code.

*ASCII stands for United States of America Standard Code for Information Interchange.

ASSEMBLER PROGRAM: The Assembler Program translates man readable source statements (mnemonics) into machine understandable object code.

ASSEMBLY LANGUAGE: A machine oriented language. Normally the program is written as a series of source statements using mnemonic symbols that suggest the definition of the instruction and is then translated into machine language.

ASYNCHRONOUS: Operation of a switching network by a free-running signal which signals successive instructions, the completion of one instruction triggering the next. There is no fixed time per cycle.

2068 Power Supply
Make It Cooler & Quieter

I have discovered that programs SAVED to cassette tapes from the TS-2068 can have a very high Noise/Scratch background level making verification and loading a somewhat iffy proposition. The best way to determine if you have this problem is to monitor the signal on the tape aurally during loading. The background noise can be heard before the leader and between the leader and the program. If this condition creates a problem for you, the following will provide a solution.

The TS-2068, when operated from a DC supply voltage of more than 13 volts, creates a superfluous noise on the internal power distribution lines, probably from the action of the switching voltage regulator which supplies the regulated 5 volt supply. Somehow, this noise finds its way to the SPKR/TAPE output of the SCLD chip. For some unknown reason, if the DC supply voltage is reduced to something less than 13 volts this noise disapears. I have found that a supply voltage of about 8 volts gives very good results. There are two drawbacks: At less than 15 volts you get NO COLOR output and the A&J MicroDrive will not work.

Because I sometimes wish to use the MicroDrive and the Cassette tape storage interchangeably, as in taking programs from the MicroDrive and giving them long term storage on the cheaper cassettes, I developed a voltage reducer to put in the cord of the TS-2068 power unit so that I can change the supply voltage from the normally used 15 volts to a lower 8 volts when I want to save a program to cassette tape. The supply voltage can be changed from 15 volts to 8 volts and back to 15 volts without affecting any of the program or data stored in the TS-2068 memory.

Also, by operating the TS-2068 at a normal 15-16 volt level rather than the power unit's output of about 21 volts, the heat dissapation in the TS-2068 is reduced considerbly.

The schematic of the voltage reducer is self-explanatory. Two words of caution, however. Although the regulating transistor, 2N3055 or similar, is capable of passing many amps of current, it must be well heat-sinked as it dissipates about 5 Watts when delivering the low voltage output. When cutting the cord of the power unit, verify the polarity of the leads when they are reconnected remembering that the outer contact of the concentric connector is positive and the inner contact is negative.

-- J W Dowell

CKT TS/2068 Voltage Reducer
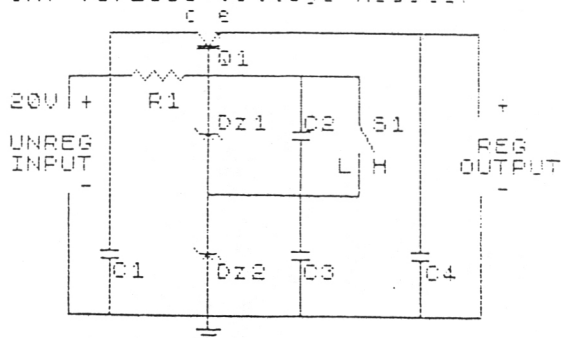
C1 - 0.1mf Cer   R1 - 270 ohm/2W
C2 - 100mf/10V   Dz1 - 6.4V/.4W
C3 - 100mf/10V   Dz2 - 9.1V/.4W
C4 - 0.1mf Cer   Q1 - 2N3055 ETC

14

Using Parallel Interface Printers With the QL

Technology Research and other QL hardware manufacturers have introduced centronics parallel interfaces to allow the QL to drive parallel printers, which are more common than serial interfaced printers.

Some information on how to install these parallel interfaces to work with the QL's software is given in the INFORMATION section of the QL manual. Additional information may also be supplied by the interface manufacturer. To clarify and amplify some of that information, the following has been compiled.

To use the parallel interface in BASIC programs, call for it exactly as you would the SER1 and SER2 serial interfaces. That is, specify a channel to open, followed by the periperal designation PAR. Examples:

```
10 OPEN #3, ser1    (opens channel 3 to
                     serial port 1)

0 OPEN #5, par      (opens channel 5 to
                     parallel port)
```

To install the parallel interface to work with Quill, Archive, Easel, or Abacus, turn on or reset the computer without any cartridges in either microdrive. Select F1 or F2 for monitor or TV. Then...

1. Put backup copy of Quill in mdv1 (or flp1 for disk). Load and run INSTALL_BAS. (If using a disk system, first specify that the disk system is to act like microdrives. This is done with FLP_USE MDV on the Technology Research unit. Then load and run the install program.)

2. Specify where the new printer installation data is to be saved by the program when it prompts for it.

3. Press the SPACE BAR to indicate a parallel interface will be installed.

4. Select the appropriate printer from the menu provided.

5. Select EDIT by pressing F2 then use the cursor keys to change PORT: NONE to read PORT: PAR.

6. ESC to end editing then F5 to save the new installation information on your microdrive or disk.

7. Exit the install program and RESET the computer before trying to use any other program.

If everything has been done right, any print call from within Quill or the other software will now direct output to the parallel interface. A separate microdrive cartridge set up for serial interfaces should be kept for using serial printers.

A FINAL NOTE: There is another alternative. There are serial to parallel cables available for about $45-50 from English Micro Connection which allows the user to plug one end in SER2 and the other end into a parallel printer. No other installation procedures are necessary since the computer still thinks it is dealing with a serial interface and printer.

-- Richard Cravy
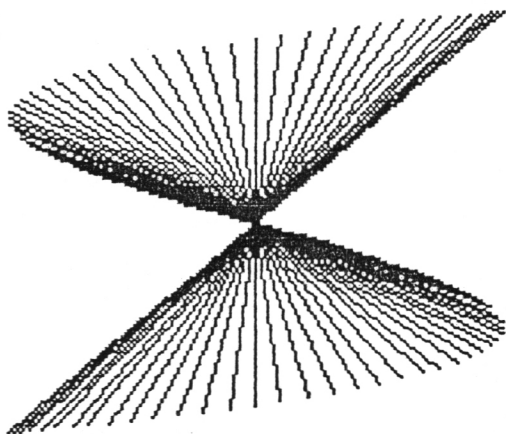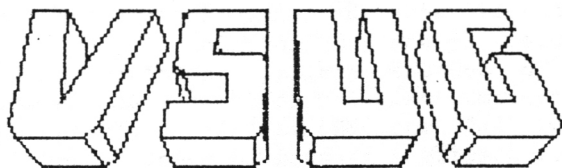
The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of all SINCLAIR and TIMEX computers.

Pres:- Ken Abramson
V/Pres:- 'Rusty' Townsend
Sec:- Harvey Taylor
Treas. & Editor:- Rod Humphreys

Our membership dues are only $15.00/year and may be sent to the Treasurer:

   Rod Humphreys
   2006 Highview Place
   Port Moody, B.C., V3H 1N5

Members of VSUG receive a monthly issue of ZXAppeal - our newsletter.

ZXAppeal accepts advertising. Our **PREPAID** rates are:

   $20.00 -- full page
   $12.00 -- 1/2 page
    $8.00 -- 1/4 page

ZXAppeal has a print run of 75 copies per month for members and is distributed to approx 40 other SINCLAIR User Groups throughout North America as well as overseas via the NETWORK.

NETWORK correspondence may be directed to the Editor at the above address.

All articles appearing in ZXAppeal may be reprinted by other T/S User Groups as long as credit is given to the author and VSUG.